

revelations it is tantalizing to read about his earlier career. At one time he quarreled with the SPR leadership and allied himself with Harry Price. His persistent failure to replicate the Duke results led him to become suspicious of Rhine's success, but his statements on the topic were so contradictory that it was difficult for his contemporaries to know where he stood.

From our present vantage-point it may seem as if the authors have given too much prominence to the Rhinean school at the expense of other developments in psychical research that are dealt with here only superficially. But it must be understood that the book is written from a particular perspective and is concerned above all with the changing status of parapsychology as an aspiring science. There are those who will protest that the question of status is, after all, of secondary importance and that what alone ultimately matters is the truth, or otherwise, of the parapsychological claims. Rhine himself seems to have realized early on that parapsychology could never fit comfortably into any existing academic niche, still less become a mere subdivision of psychology. He was resigned to the fact that for a long time to come it would have to be content to plough a lonely furrow. Yet, if experimental parapsychology is ever to flourish in our society the good will of the scientific and academic community is vitally important and we can surely learn a lot from our past experience by reading this informative book. No doubt many of the facts with which it deals will be familiar to many readers of this journal but I do not know of anywhere else where they have been dealt with so systematically, at such length, and yet so readably as here; and for this alone we should be grateful to Drs. Mauskopf and McVaugh. One could even say that it is a sign of the growing prestige and maturity of the field that it should have attracted this sort of attention from two such historians.

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ESP AND PSYCHOKINESIS: A PHILOSOPHICAL EXAMINATION by Stephen Braude. Philadelphia: Temple University Press, 1979. Pp. 277. \$19.50, cloth.

This book is the first full-length original examination of parapsychology from a philosophical viewpoint since C. D. Broad's monu-

mental *Lectures on Psychical Research*, published in 1962.¹ As so much of interest has happened in the field since then, the appearance of a work such as this was overdue. Braude's book is not only timely; it is well done, being for the most part a carefully thought-out and penetrating look at many topics of concern to the experimenter as well as to the theorist.

As stated in the preface, the aims of the book are twofold: to function as "a source book for philosophers on the experimental evidence of parapsychology"; and to explore the conceptual foundations and philosophical implications of parapsychological research. Concerning the first aim, the experiments described in this work constitute a very small sample of the published research; I feel that philosophers (or anyone else) interested in an overview of the evidence would be better served by consulting Wolman's *Handbook of Parapsychology*,² or the volumes edited by Krippner in 1977³ and 1978⁴. It is with respect to the second aim that Braude's book is notable.

In the first section of the book, entitled "Conceptual Foundations," the author begins by examining various terms and distinctions found in the parapsychological literature. He expresses concern that some readers might find this discussion of terminological matters "needlessly detailed"; but I feel that, given the uncritical casualness with which assumption-laden terms are used by many parapsychologists, such a respect for conciseness is refreshing and useful. First, the author reminds us of the different implications of viewing psi as an ability and as a function, and of the superiority of defining psi in terms of interaction rather than cognition. Over twenty pages are devoted to carefully working out concise definitions of telepathy, clairvoyance, precognition, and psychokinesis. Of these definitions, only that of precognition is bound to be controversial in some quarters: "State *s* of person *P* is precognitive = *df* a causal condition of *s* is some state of affairs occurring later than *s*." Thus, precognition by definition involves retrocausation. Braude acknowledges that this is a contentious position, but chooses not to expand on why this is so. It

¹ C. D. Broad. *Lectures on Psychical Research*. New York: Humanities Press, 1962.

² B. Wolman (Ed.). *Handbook of Parapsychology*. New York: Van Nostrand Reinhold, 1977.

³ Stanley Krippner (Ed.). *Advances in Parapsychological Research*. 1. *Psychokinesis*. New York: Plenum Press, 1977.

⁴ Stanley Krippner (Ed.). *Advances in Parapsychological Research*. 2. *Extrasensory Perception*. New York: Plenum Press, 1978.

might have been worth while for the author to have devoted some space to defending his definition, considering that such eminent philosophers as Broad⁵ and Mundle⁶ have expressed difficulty in even conceiving of precognition as retrocausation.

Following these preliminaries is a discussion of some issues pertaining to ambiguities in interpreting the results of psi research, and an examination of parapsychology's "replicability problem," which is regarded by many as the field's major obstacle to widespread scientific acceptance. The author points out that what constitutes a repeatable experiment is by no means clear in other sciences; that there is good reason to suspect that paranormal phenomena by their very nature may remain resistant to attempts at control; and that the assertion that there are no repeatable psi experiments is questionable. (A point that is not raised in the book, but which is surely relevant in this context, is the relative lack of interest on the part of psychologists in even attempting to replicate their results.⁷) Braude seems to view the "replicability problem" as a non-problem, but I did not find this approach entirely convincing—granting that the notion of replicability in science is not very clear does not mean that it is unimportant. Surely there is a sense in which a typical physics experiment is repeatable, and a typical parapsychology experiment (to date) is not. Perhaps some philosopher will attempt to clarify this sense at a future time.

The next section is entitled "The Data." In it, some of the stronger evidence for the various categories of psi is reviewed, such as the Pearce-Pratt card-guessing work and Schmidt's experiments with random number generators. Critical examinations of some prominent theoretical positions pertaining to psi phenomena comprise the bulk of the section. Braude unfavorably reviews the muddled logic of the observational theories, pointing out that if presentation of feedback causes (through retro-PK) the correct target to have been generated, as this target generation causes the feedback then such a situation involves a logical circularity. He also attacks Stanford's rejection of cybernetic/psychobiological models of psi. For instance, concerning Stanford's point that monitoring of the target process for successful psi would under certain circumstances have to occur at a

⁵ C. D. Broad. The notion of "precognition." In J. R. Smythies (Ed.), *Science and ESP*. New York: Humanities Press, 1967.

⁶ C. W. K. Mundle. Does the concept of precognition make sense? *International Journal of Parapsychology*, 1964, 6, 179-198.

⁷ See N. C. Smith. Replication studies: A neglected aspect of psychological research. *American Psychologist*, 1970, 25, 970-975.

much faster rate than any brain process would be capable of, Braude states that this may simply indicate that psi functioning is more efficient than brain functioning.

The final part of this section is devoted to presenting a critique of theories which purport to explain telepathy in terms of energy transfer. The author attempts to demonstrate that such theories are not merely empirically unlikely, but are logically impossible. He states that the necessity of energy transfer is an assumption of information-processing approaches to psi. This is not the case, as Rudolph⁸ has recently pointed out. Braude states that an instance of telepathy does not merely involve a mental event of person A causing a mental event of person B; there must be some semantic regularity between the mental events, such that we can say that they are similar. According to energy-transfer theories, this regularity is established as follows: the thought of person A causes, or is identical to, a state of his brain; information about this brain state is energetically transferred from A's brain to B's brain; the resultant state of B's brain causes, or is identical to, a thought similar to A's original thought. The author argues that a thought cannot correlate with any particular brain state, as the meaning of a thought derives from the context in which it is experienced, such as the general train of thought, characteristics of the physical vicinity, etc. Therefore, "topologically identical brain-states may, in different contexts, have different representational properties." Thus, it is impossible to produce a thought in B with a meaning similar to that of A merely by changing B's brain state, and so the energy transfer theories cannot explain the crucial semantic regularity characteristic of telepathy. To the person who would argue that we can specify the necessary and sufficient physical conditions for a particular thought by taking into account other details, such as overt behavior, in addition to the brain state, Braude replies that if the verbal reports of A and B concerning their thoughts were identical, we would still have to ascertain whether the reports meant the same, and to the physicalist this would mean ascertaining whether A and B were in the same kind of brain state. To determine this, we would have to ask A and B for clarifying statements, but even if *these* statements were identical we would be no further ahead, as we would have to ascertain whether they also meant the same.

I am not convinced by the author's presentation, and this may be

⁸ L. D. Rudolph. The psi channel coding problem. In B. S. Shapin and L. Coly (Eds.), *Communication and Parapsychology*. New York: Parapsychology Foundation, 1980.

due to some lack of comprehension on my part. Granted that the meaning of a particular thought is a product of its context, this context is not really composed of objects in the physical vicinity, or of previous events, but of the effects of these things on us in the present. It is unclear to me why thoughts and their relevant mental contexts may not *together* correlate with physiological states.

Another point: while in the abstract it is fine to require "semantic regularity" for telepathy to have occurred, the experimenter has to settle for behavioral regularity. If a "receiver" in a telepathy experiment sketches a perfect facsimile of a distinctive and highly uncommon object, like an astrolabe, which is being thought of by the "agent," most experimenters would regard this as possibly suggestive of telepathy, but they would never be able to determine whether the astrolabe meant similar things to the participants. Braude's arguments seem to imply the impossibility of doing meaningful telepathy experiments.

Also, whether it is logically possible or not, it seems evident that certain experiences do correlate with brain processes to some extent. Electrical stimulation of the occipital cortex is much more likely to elicit a report of an anomalous visual experience than would stimulation of a frontal lobe. Whether or not more detailed aspects of experience correlate with brain processes would seem to be an empirical question, not one that is subject to an a priori judgment.

The next section of the book is devoted to an examination of various positions in the philosophy of mind, psychology, and parapsychology which the author holds to be untenable.

First, the psychophysical identity theory called anomalous monism is examined. Anomalous monism holds that every mental state is identical to a particular brain state, but that there need be no regular correlations between types of mental states and types of brain states. The author convincingly argues that *any* assertion of mind/brain identity must presuppose type-type correlations. Because of this, anomalous monism is subject to the criticisms advanced against the notion of thought/brain-state correlations in the discussion of the energy-transfer theories of telepathy.

Next, the "Principle of the Internal Mechanism" (PIM) is attacked. According to this principle, "It is possible to explain . . . why *S* is in . . . mental state *m* by reference to some corresponding physiological structure of mechanism *b* identical with, or causally responsible for, *m*." The author employs a by-now-familiar approach: a discrete physical structure cannot unambiguously represent a mental state,

because what that mental state *is* is not intrinsically unambiguous, but rather is determined by its context. Some implications of this position are developed: nature does not come "prepared," but is rather an intrinsically undifferentiated flow, which we articulate according to our purposes. Human history (or anything else) can never be viewed except from one's own position in a particular context.

If the PIM cannot be used, what sorts of explanations of mental states may we employ? Braude feels that we may have to content ourselves with such as the following: I remembered my friend's telephone number because I have the ability to remember telephone numbers.

Several points should be made concerning the book's treatment of the PIM. It seems to me that if we were to leave the argument where the author does, science would immediately grind to a halt. The scientific endeavor may be viewed in large part as a study of relations between variables which are not "intrinsically unambiguous"—for instance, the astrophysicist selects the variables of temperature and color from his/her total experience of stars, and may advance our knowledge by examining any correlated variations of these variables. Concerning the mental-event/brain-event variables, admittedly the mental event is not an *a priori* unit, but neither is the brain event. The author himself points out that "the claim that brain states have a manifest structure is completely implausible." An examination of correlations between mental events and brain states would appear to be a reasonable scientific activity, provided we keep in mind that our variables are selected for a purpose and are not intrinsically distinct from the "undifferentiated flow."

It is claimed in the book that the PIM is the "backbone" of cognitive psychology. While most cognitive psychologists probably hope that the processes they study may one day be identified with neural processes, this hope is by no means necessary for doing cognitive psychology; the concepts used in theorizing in this field are explicitly cognitive rather than neurological.

Also, it seems that the author's suggestions for explanations to replace those of the PIM type are unsatisfactory. The example of remembering the telephone number, mentioned above, appears to be a blatant case of circular reasoning.

The section closes with criticisms of the theories of Pribram and Walker. Concerning Pribram's holographic theory of consciousness, it is pointed out that attempting to explain a mental state by a holographic state of the brain still relies on the PIM, which the author

rejects. Walker's discussions of consciousness in terms of bits of information are attacked as assuming that bits are "fundamental or atomic constituents of mental or brain events rather than conventionally defined components." It is not obvious to me that Walker is necessarily so naive. The choice of analyzing problems of interest in terms of discrete units has proven useful in other fields (e.g., quantum mechanics in physics, information-processing approaches in cognitive psychology), and may prove so in parapsychology as well. Again, it seems to me that the value of Walker's ideas should be assessed through empirical investigation rather than by a priori judgment.

In the next section, Jung's concept of synchronicity is scrutinized. The author points out that synchronistic relationships need be "acausal" only in a pre-Humean sense of causality as involving some kind of actual link between cause and effect. Synchronistic explanations can have no scientific value, as they can only be used to explain events after the fact. Furthermore, it is argued that Jung's idea that the meaning of a synchronistic event is "built into" nature is incorrect—the world has no meanings other than the ones we articulate.

The final section of the book deals with the definition of the term *paranormal*. Previous philosophic attempts to delineate the realm of the paranormal are discussed, and the author tentatively offers his own—that a paranormal phenomenon violates our expectations, and cannot be explained without major revisions in scientific theory. This definition may require some alteration if it turns out, as some of the data suggest it may, that some sort of positive expectation is facilitative of paranormal occurrences.

An error in the text and bibliography should be noted: reference 78 should be to an article by J. E. *Kennedy*, not Kelly.

Overall, reading this book was a very thought-provoking experience. I feel that a work which stimulates the reader to think in new ways is more valuable than one with which he/she simply agrees; therefore, despite the disagreements I have with several sections, I highly recommend Stephen Braude's book to those concerned with philosophical and theoretical issues in parapsychology.

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